PHOTO STORY No. 8

The furrow seeder operating on a stony, brushy old field. The equipment consists of a small crawler tractor, a special middle buster plow to prepare a seedbed, and the newly developed seeder unit.

NEW SEEDER FOR ROUGH LANDS

Yankee ingenuity, coupled with cooperation between two governmental agencies is helping tree seeding in the Northeast.

A practical technique for establishing forest trees directly from seed was recently developed for use in the Northeast by the Forest Service's Northeastern Forest Experiment Station Laboratory at Durham, N. H., in cooperation with the Maine Forest Service. Under the system, a special machine prepares a garden-like seedbed, sows the seeds in a shallow row, and then covers them with soil. This results in a new forest grown directly from seed at about one-third the cost of the conventional method of planting small nursery-grown plants.

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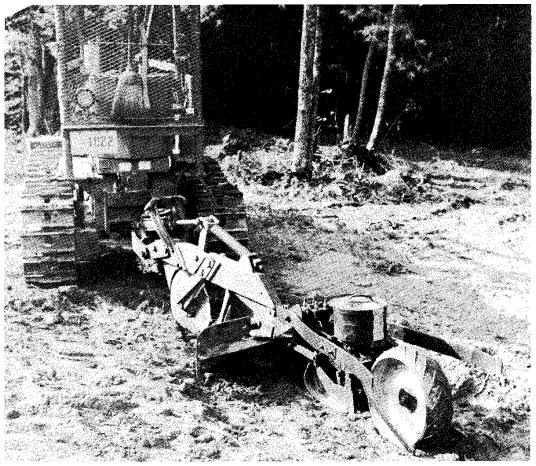
NORTHEASTERN FOREST EXPERIMENT STATION • UPPER DARBY, PENNSYLVANIA 19082



This shows in detail the special plow and seeder unit.

The new machine, called a furrow seeder, was developed especially to operate on the rough, stony lands of the Northeast. It can be used to direct-seed an acre of land in approximately 1 hour with as little as one-third pound of seed. The furrow seeder will also allow the seeding of pine on many areas of formerly unproductive wildland.

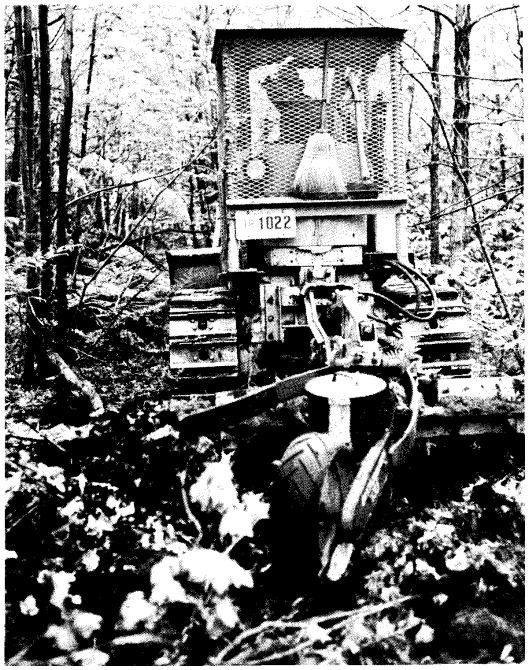
Heretofore, on many acres of unproductive wild lands in the Northeast, planting or seeding of nursery-grown conifers has been very expensive, and direct-seeding has often failed. Although, according to research findings, the mineral soil, seedbeds, and shade from the existing overstory may be quite favorable to germination and seedling survival, direct-seeding cost has made the process prohibitive.

That's why forestry researchers began looking at ways to make the furrow-seeding technique practical in the Northeast. The method had already proven its worth in the South, where a tractor-drawn furrow-seeder prepared the seedbed, sowed and covered the seeds, and could easily be maneuvered so as to leave some existing vegetation for shade.

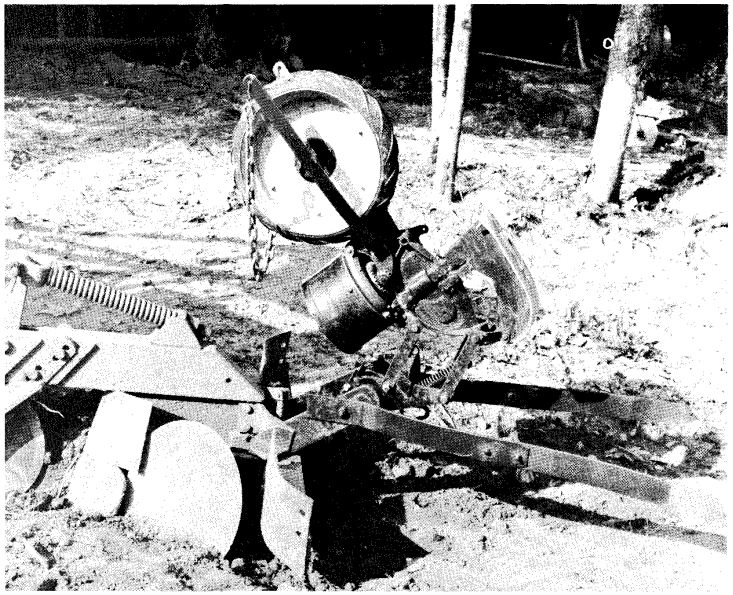
However, there was no commercial equipment suitable to do this same task in the stony Northeastern brushland. So, the researchers used "Yankee ingenuity" and adapted existing equipment to suit their needs. From a fireline plow and a beet planter they devised a furrow seeder. They then tested it on a wide range of site conditions to determine its effectiveness in stocking red and white pine seedlings.

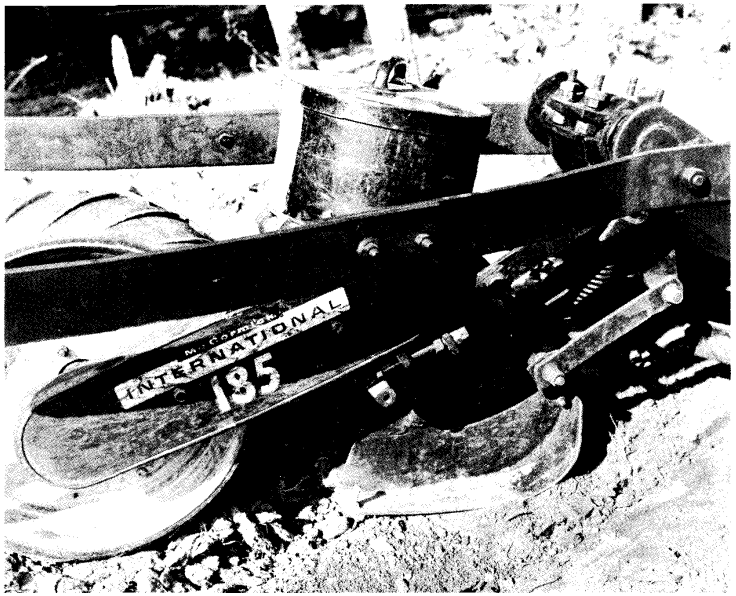
The test and research involved in the development of this direct-seeder for northern conifers is reported in a research publication authored by Raymond E. Graber, a plant ecologist, and Donald F. Thompson, a forestry research technician. Both are stationed at the Forest Service, Durham, N. H., Laboratory. The publication, NE-150, is available from Information Services, Northeastern Forest Experiment Station, Upper Darby, Pa., 19082.

The furrow seeder is operating in a low-quality sprout maple and oak stand. This scrub vegetation will be converted to a thrifty stand of pine at a cost of 10 to 15 dollars per acre.

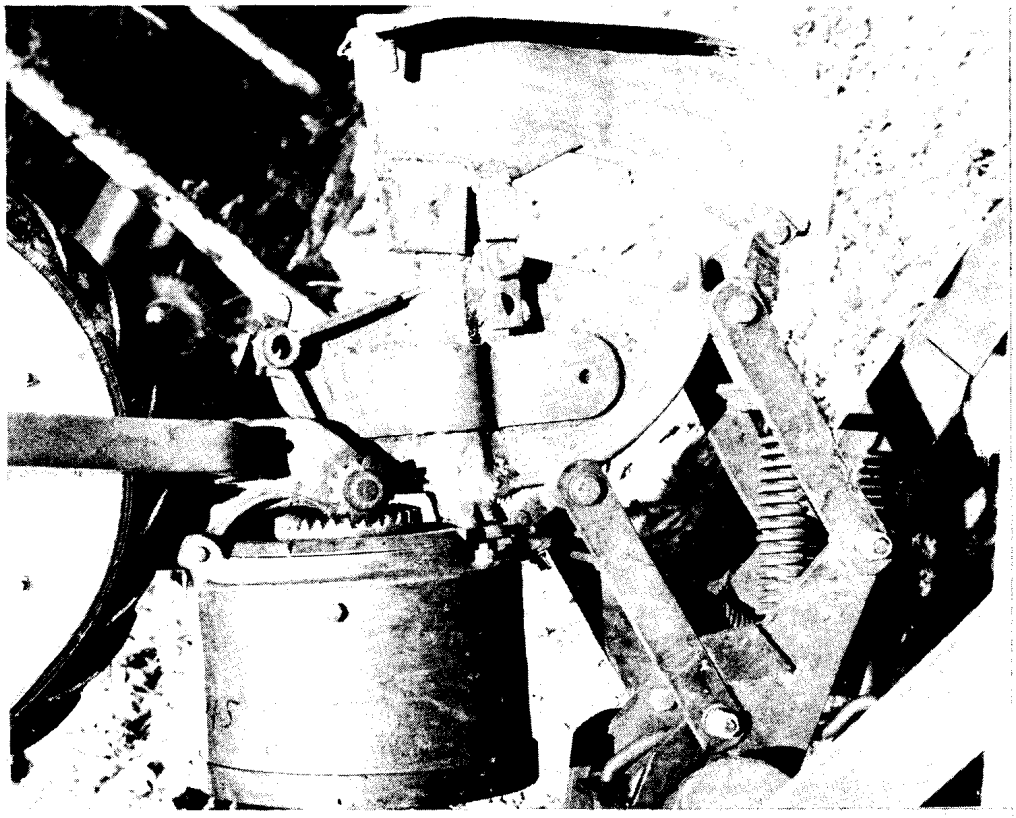


A unique feature of the newly developed seeder is the hitch which allows the seeding unit to swing up and ride over obstacles like large stones, stumps, or downed logs.





Side view of the seeder unit. Note the heavy steel hitch, the vertical pivot, the side guards which protect the unit from damage caused by striking stumps and boulders, an improved seed hopper, and a steel ski which increases the ability of the seeder to ride over rough ground without becoming entangled and damaged.



This illustrates details of the reinforced framework and steel ski.

At the end of a row the furrow seeder is lifted hydraulically, the tractor turns around and resumes seeding --. a total time lapse of 10 to 15 seconds.